African Chicken Genetic Gains

More productive chickens for Africa's smallholders

Brief 1

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Initial performance data on some chicken breeds identified for ACGG in Ethiopia

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ACGG is a research-for-development partnership project working in Ethiopia, Nigeria and Tanzania. It aims to develop public-private partnerships that will contribute improve chicken productivity to benefit smallholders. The project will test and disseminate improved breeds of chickens likely to suit the needs of farmers in low-input systems.

ACGG and more than 7500 smallholder farmers will conduct on-farm and on-station germplasm testing to be able to demonstrate improvements in chicken productivity and household income growth and consumption as well as chicken preferences.

Community-level innovation platforms will engage women to co-create solutions to their challenges, such as viable service delivery models, access to preferred chicken strains, and marketing solutions.

In parallel, national-level innovation platforms will target and facilitate the development of local public and private sector partnerships to promote and deliver affordable hatching, vaccination, brooding, and sale of preferred chicks to farmers.

Identifying suitable chicken breeds

National partners and ILRI have carried out some preliminary identification of chicken genotypes that may suit smallholder needs in terms of improved productivity under low-input conditions and agro-ecological adaptability.

The candidate breeds believed to contain traits that farmers will prefer are listed in table 1.

Tables 2-4 show performance metrics of preliminary candidates for testing in Ethiopia.

Table 1. Breeds proposed for testing by ACGG

Nigeria	Ethiopia	Tanzania
Fulani	Improved Horro	Australorp
Shika Brown	Koekoek	Sasso
FUNAAB Alpha	Fayoumi	Kuroiler
Koekoek	Sasso	Koekoek
Kuroiler	Kuroiler	Embrapa 051
Embrapa 051	Embrapa 051	Local strain
Local strain	Local strain	

Table 2. Performance of Potchefstroom Koekoek at Debre Zeit Agricultural Research Centre

Trait	On-station performance	On-farm
Mean egg no./bird/y	NA	187.04 + 13.49
Age at first laying (d)	153.3 ±6	NA
Fertility (%)	77.70 ± 0.5	NA
Hatchability from set eggs (%)	79.88 ± 0.5	NA

Table 3. Performance of Fayoumi at Debre Zeit Agricultural Research Centre

Trait	On-station performance	On-farm
Egg no./ bird/year	159.9 ± 10.7	150.47 ± 3.1
Age at first laying	NA	231 + 5.53
Fertility (%)	91.35 ± 0.5	NA
Hatchability from set eggs (%)	81.98 ± 0.7	67.9 ± 4.11
Body wt 18m (kg) males	NA	1.4 ± 0.04
Body wt 18m (kg) females	NA	1.2 ± 0.05
Survival 0-8w (%)	NA	92.8

Table 4. Performance of Horro breed at Debre Zeit Agricultural Research Centre

Trait	On-station performance		On-farm performance
	Un-improved	Improved (G 7)	Improved (G7)
Hen-housed egg production (12m)	23.3 (0.1)	48.7 (0.3)	43.46 (2.9)
FCR (kg feed / kg gain)	15.3 (0.2)	12.4 (0.1)	NA
Fertility (%)	NA	77.00 (0.1)	NA
Hatchability from set eggs (%)	NA	43.80 (0.9)	NA
Body wt (g) at 20 w (females)	684.8 (4.7)	964.2 (1.4)	NA
Survival 20w (males)	88.8 (0.0)	98.8 (0.0)	NA
Survival 24 w (females)	NA	NA	88.8 (1.3)

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African Chicken Genetic Gains is an Africa-wide collaboration that uses genetics so the continent's smallholder can get more productive chickens.
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